[0099] **ABSTRACT OF THE DISCLOSURE**

[0100] Nonvolatile etch byproduct contaminants are generated during etching processes for forming electrodes of storage capacitors for very high density future memory cells, such as ferroelectric random access memory (FeRAM) cells. These contaminants include significant quantities of metals and metal compounds. In order to prevent undesirable metal etch byproduct particulates from adversely affecting subsequent etching processes performed in the chamber, the plasma metal etch chamber is seasoned by placing a substrate in the chamber, then exposing the substrate and interior surfaces of the chamber to a seasoning plasma generated from a source gas that includes at least one principal etchant gas used during an etch process which produced the nonvolatile etch byproducts. The method is performed at a substrate temperature that is equal to or greater than a substrate temperature at which the nonvolatile etch byproducts were produced. Exposure of the substrate to the seasoning plasma generates an entrapment and adhering material which adheres the nonvolatile etch byproducts to interior chamber surfaces.